		NTSB ID: DFW08FA237		Aircraft Registration Number: N4165T	
		Occurrence Date: 09/28/2008		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Collinsville	State OK	Zip Code 74021	Local Time 1148	Time Zone CDT	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 1			
Aircraft Information Summary					
Aircraft Manufacturer CESSNA		Model/Series 320D		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***</p> <p>HISTORY OF FLIGHT</p> <p>On September 28, 2008, approximately 1148 central daylight time, a twin engine Cessna 320, N4165T, sustained substantial damage when in collision with terrain while maneuvering to land at Airmen Acres Airport (OK93) near Collinsville, Oklahoma. The certified commercial pilot and the private pilot were fatally injured. The airplane was registered to and operated by the private pilot. No flight plan was filed for the flight that originated at the private airport approximately 1140. Visual meteorological conditions prevailed for the personal flight conducted under 14 Code of Federal Regulations Part 91.</p> <p>Airmen Acres Airport is a private use airport and fly-in community with a 2,650-foot-long grass runway. Both pilots lived at the airport. According to other residents of the fly-in community, the private pilot had been restoring the airplane. This was his first flight in the airplane since he purchased it approximately four years prior. The commercial pilot also held a certified flight instructor certificate for multi-engine land airplane, and was going to provide instruction to the private pilot. However, the accident flight was not for instructional purposes and was considered a maintenance test flight only.</p> <p>A witness, who was a Federal Aviation Administration (FAA) certified airframe and power plant mechanic and lived at the airport, stated that he observed the airplane make a high-speed taxi test, and then perform a magneto check, and cycle both propellers before it made a "normal take-off" to the north. The witness did not observe any problems with the airplane prior to its departure. Shortly after, he heard the airplane make a "normal approach with no landing gear extended." The witness snapped a photo of the airplane as it passed by him. The time was 1147. A review of the photograph revealed that both engines were operating and there were no signs of any obvious mechanical problems.</p> <p>The witness then watched the airplane make a climbing, left hand turn. The next time he saw the airplane was when it was on the downwind leg of the traffic pattern with the landing gear extended. He said, "At this time I could hear what sounded like the rpm on the engines went extremely high. They were really whining and I was concerned that if this continued that they would blow an engine. Right about this time the engine noise seemed to go back to normal." The witness said the airplane was about to make a left turn onto the base leg when he looked away from the airplane to adjust a setting on his camera. When he looked back up at the airplane it was "heading almost straight down (85 degrees) and the wings were rolling." The airplane disappeared behind a tree line and he knew the airplane had crashed.</p>					
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**Narrative (Continued)**

Another witness also observed the airplane as it made a left turn onto the base leg of the airport traffic pattern. He stated that as it got three-quarters into the left turn, the nose of the airplane dropped downward "approx[imately] 75 percent or more." It then made a slight turn to the right before it disappeared from his view. Shortly after, he heard the sound of the impact.

A review of plotted radar data revealed that during the airplane's second circuit around the airport, the ground speed decreased toward the airplane's stall speed at the time the radar data ended.

**PILOT INFORMATION**

The commercial pilot was rated for airplane single and multi-engine land, and instrument airplane. He also held a certified flight instructor certificate for airplane single- and multi-engine land, and instrument airplane. His last second class FAA medical was issued on June 10, 2008. At that time, he reported a total of 2,000 flight hours.

The private pilot was rated for airplane single and multi-engine land. He also had an FAA airframe and power plant certificate. His last third class FAA medical was issued on June 28, 2007. A review of his last FAA airman application dated September 1, 2008, revealed he had a total of 215 flight hours.

**AIRCRAFT INFORMATION**

The logbooks for the airplane were never located.

**METEOROLOGICAL INFORMATION**

The weather at Tulsa International Airport (TUL), Tulsa, Oklahoma, about 9 miles south of the accident site, at 1153, was reported as wind calm, visibility 10 miles, clear skies, temperature 27 degrees Celsius, dewpoint 13 degrees Celsius, and a barometric pressure setting of 30.16 inches of Mercury.

**WRECKAGE INFORMATION**

An on-scene examination of the airplane wreckage was conducted on September 29, 2008. The examination revealed that the airplane came to rest upright in an open field approximately one-mile south-southwest of Airmen Acres Airport on a heading of 124 degrees and at an approximate elevation of 651 feet. All major components of the airplane were located at the site and there was no post-impact fire.

The initial impact was a series of ground scars located approximately 1-foot to the right of the airplane's right wing and both engines.

The right wing sustained extensive impact damage and was displaced aft. The forward portion of the right main tip tank was flattened and had separated from the airframe. There was some light blue colored fuel found in the remaining portion of the tank along with an open-ended 1-1/8-inch wrench.

A loose screwdriver was found outside of the right tip tank in the area of the tip tank transfer pump. The auxiliary tank (bladder cell) was ruptured; however continuity of the fuel system from the tanks to the engine was established and compressed air was blown clearly through all of the lines. The tip tank fuel pump and boost pump were removed and tested. Each pump functioned normally.

The left wing sustained less impact damage than the right wing. The main tip tank was breached and empty of fuel; however, the auxiliary tank (bladder cell) was intact and was wet with fuel.

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**Narrative** (Continued)

According to an FAA inspector, he said that there was 2-3 gallons of fuel in the tank when he first arrived at the site on the day of the accident. Continuity of the fuel system was established and compressed air was blown clearly through all of the lines. The tip tank fuel pump and boost pump were removed and tested. Each pump functioned normally.

The fuel selector valves for each engine were found in the "main tank" position. All fuel system check valves were tested and functioned as designed. Both glass fuel strainer bowls were broken and the screens were absent of debris.

The tail section remained relatively intact and exhibited minor damage. There was some wrinkling of the skin just forward of the vertical stabilizer attachment area.

Control cable continuity was established for all flight control surfaces from the surface to the forward cabin area. The landing gear actuator was in the extended position and the flap chain actuator indicated the flaps were fully retracted.

The pilot side control wheel had separated in one piece from the control column. The co-pilot's control wheel also separated from the control column; however, it was broken in half at the center. The airplane was not equipped with shoulder harnesses.


Examination of the right engine revealed it has sustained impact damage. The Teledyne Continental Motors data plate indicated that it had undergone a factory rebuild. One of the magnetos had separated from its housing. Both magnetos were removed from the engines and the leads were cut. The couplings were rotated via a power drill and spark was produced on all leads. The engine driven fuel pump was removed and the coupling was intact. The pump freely rotated by hand and some dark green colored liquid was drained from the pump. The oil pump and its associated gears appeared undamaged. The mixture control was removed and disassembled. The finger screen had a light coating of debris and a small amount of dark green colored liquid with a foul odor was drained from the unit. The fuel manifold was removed from the engine and disassembled. There was no fuel in the fuel lines and the plunger and diaphragm appeared new. The screen was absent of debris and there was a trace amount of a dark green colored liquid with a foul odor in the valve housing.

The engine was rotated via the vacuum pump drive. Valve train continuity and compression were established on each cylinder. The top spark plugs were removed and exhibited normal wear.

The three-bladed propeller had separated from the engine at the crankshaft flange. One blade was bent aft and exhibited polishing along 90 percent of the front face of the blade. The second blade was bent aft and also exhibited some front face polishing. The third blade appeared to be straight and undamaged.

Examination of the left engine revealed that it had sustained impact damage. The engine did not have an official Teledyne Continental Motors data plate. There was a large amount of sealant noted on the top front section of the crankcase spine. One of the magnetos had separated from its housing. Both magnetos were removed from the engines and the leads were cut. The couplings were rotated via a power drill and spark was produced on all leads. The engine driven fuel pump was removed and the coupling was bent. The pump freely rotated by hand and some dark green colored liquid with a foul odor was drained from the pump. The oil pump and its associated gears appeared undamaged. The mixture control was removed and disassembled. The finger screen was absent of debris and a small amount of dark green colored liquid with a foul odor was drained from the unit. The fuel manifold was removed from the engine and disassembled. There was no fuel in the fuel lines and the plunger and diaphragm appeared new. The screen was absent of debris and the housing was wet with fuel.

The engine was rotated via the propeller flange. Valve train continuity and compression were

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## Narrative (Continued)

established on each cylinder. The top spark plugs were removed and exhibited normal wear.

The three-bladed propeller remained attached to the engine and was removed. One blade had separated from the hub and exhibited forward bending with polishing to 90 percent of the front face of the blade. The second blade was also bent forward and exhibited some front face polishing. The third blade appeared to be straight and undamaged.

## MEDICAL AND PATHOLOGICAL INFORMATION

Both pilots were autopsied by the Office of the Chief Medical Examiner, in Tulsa, Oklahoma. The cause of death for both pilots was determined to be "blunt force trauma."

On autopsy, the commercial pilot was noted to have fractures of both lower legs and ankles, the right lower arm, and near amputation of the right thumb and right index finger, and the private pilot was noted to have multiple fractures of both legs and both arms, and fractures of the right hand.

The FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing. The commercial pilot's toxicology report noted:

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>> 0.866 (ug/mL, ug/g) FLUOXETINE detected in Blood
>> 0.137 (ug/mL, ug/g) FLUOXETINE detected in Urine
>> 0.644 (ug/mL, ug/g) NORFLUOXETINE detected in Blood
>> 0.115 (ug/mL, ug/g) NORFLUOXETINE detected in Urine
>> 0.638 (ug/mL, ug/g) NORTRIPTYLINE detected in Blood
>> NORTRIPTYLINE detected in Urine
>> 0.044 (ug/mL, ug/g) TRAZODONE detected in Blood
>> TRAZODONE detected in Urine
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The private pilot's toxicology reported noted:


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>> 0.14 (ug/mL, ug/g) DIPHENHYDRAMINE detected in Blood
>> DIPHENHYDRAMINE detected in Liver
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FAA forensic toxicology staff noted that the commercial pilot's blood used for testing for fluoxetine and nortriptyline at the FAA toxicology laboratory came from a container labeled "Chest Cavity," and the anatomical source of the pilot's blood used for testing for trazodone was not specifically identified.

Review of the commercial pilot's personal medical records revealed a history of worsening hip pain that limited his ability to stand or sit for extended periods ("max ... 30 minutes in car ..."), and for which he had been under treatment with nortriptyline. Records also noted a diagnosis of post-traumatic stress disorder and treatment with fluoxetine for depression and trazodone for insomnia. The most recent outpatient visit was recorded on October 1, 2007, and noted the continuing use of nortriptyline, fluoxetine, and trazodone. The pilot's most recent application for 2nd Class Airman Medical Certificate dated June 10, 2008 did not note the hip pain or post-traumatic stress disorder or the medications used to treat the conditions.

FAA forensic toxicology staff noted that the private pilot's blood used for testing at the FAA toxicology laboratory came from a container labeled "Cavity Blood."

The private pilot was reported by his wife to occasionally use Benadryl (diphenhydramine) to relieve watery eyes when he was going to be working outside on windy days or when he was going to play golf. His most recent application for 3rd Class Airman Medical Certificate dated June 28, 2007, did not note the use of any medications or any history of hay fever or allergies.

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**Narrative** (Continued)


## TESTS AND RESEARCH


The left and right engine driven fuel pumps and associated drive couplings were sent to Teledyne Continental Motor's (TCM) Analytical Laboratory in Mobile, Alabama, and functionally tested under the supervision of the Safety Board on October 8, 2008. The fuel pumps were flowed on the TCM test bench and functioned properly through their full range of operation.

## ADDITIONAL INFORMATION

The airplane was not insured and was released to a representative of Sooner Emergency Service, Incorporated, Muskogee, Oklahoma, on October 30, 2008.  
Updated on Mar 3 2010 12:25PM

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<b>Landing Facility/Approach Information</b>						
Airport Name Airmen Acres Airport		Airport ID: OK93	Airport Elevation 695 Ft. MSL	Runway Used N/A	Runway Length	Runway Width
Runway Surface Type:						
Runway Surface Condition:						
Approach/Arrival Flown: NONE						
VFR Approach/Landing: Traffic Pattern						
<b>Aircraft Information</b>						
Aircraft Manufacturer CESSNA		Model/Series 320D		Serial Number 320D0065		
Airworthiness Certificate(s): Normal						
Landing Gear Type: Retractable - Tricycle						
Amateur Built Acft? No		Number of Seats: 6		Certified Max Gross Wt. LBS	Number of Engines: 2	
Engine Type: Reciprocating		Engine Manufacturer: CONT MOTOR		Model/Series: TSIO-520 SER	Rated Power: 300 HP	
<b>- Aircraft Inspection Information</b>						
Type of Last Inspection Unknown		Date of Last Inspection	Time Since Last Inspection Hours		Airframe Total Time Hours	
<b>- Emergency Locator Transmitter (ELT) Information</b>						
ELT Installed?/Type Yes / C91		ELT Operated? No		ELT Aided in Locating Accident Site? No		
<b>Owner/Operator Information</b>						
Registered Aircraft Owner  HAZELWOOD HARVEY L		Street Address 7462 E 126TH ST N				
		City COLLINSVILLE		State OK	Zip Code 74021-7014	
Operator of Aircraft  HAZELWOOD HARVEY L		Street Address				
		City		State	Zip Code	
Operator Does Business As:				Operator Designator Code:		
<b>- Type of U.S. Certificate(s) Held: None</b>						
Air Carrier Operating Certificate(s):						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 91: General Aviation						
Type of Flight Operation Conducted: Personal						
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<b>First Pilot Information</b>										
Name On File		City On File		State On File	Date of Birth On File					
					Age 49					
Sex: M	Seat Occupied: Left	Occupational Pilot? No		Certificate Number: On File						
Certificate(s): Flight Instructor; Commercial										
Airplane Rating(s): Multi-engine Land; Single-engine Land										
Rotorcraft/Glider/LTA: None										
Instrument Rating(s): Airplane										
Instructor Rating(s): Airplane Multi-engine; Airplane Single-engine										
Current Biennial Flight Review?										
Medical Cert.: Class 2		Medical Cert. Status: Without Waivers/Limitations		Date of Last Medical Exam: 06/2008						
- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument Actual	Instrument Simulated	Rotorcraft	Glider	Lighter Than Air
Total Time	2000									
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days										
Last 30 Days										
Last 24 Hours										
Seatbelt Used? Yes		Shoulder Harness Used? No		Toxicology Performed? Yes		Second Pilot? Yes				
<b>Flight Plan/Itinerary</b>										
Type of Flight Plan Filed: None										
Departure Point					State	Airport Identifier	Departure Time	Time Zone		
Airmen Acres					OK	OK93	1140	CDT		
Destination					State	Airport Identifier				
Same as Accident/Incident Location						OK93				
Type of Clearance: None										
Type of Airspace: Unknown										
<b>Weather Information</b>										
Source of Wx Information:										
Unknown										
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<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
TUL	1153	CDT	695 Ft. MSL	9 NM	180 Deg. Mag.
Sky/Lowest Cloud Condition: Clear				Ft. AGL	Condition of Light: Day
Lowest Ceiling: None			Ft. AGL	Visibility: 10 SM	Altimeter: 30.15 "Hg
Temperature: 27 °C		Dew Point: 13 °C	Weather Conditions at Accident Site: Visual Conditions		
Wind Direction: Variable		Wind Speed: 3		Wind Gusts:	
Visibility (RVR): Ft.		Visibility (RVV) SM			
Precip and/or Obscuration:					

<b>Accident Information</b>					
Aircraft Damage: Substantial		Aircraft Fire: None		Aircraft Explosion: None	

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL	
First Pilot	1				1	
Second Pilot	1				1	
Student Pilot						
Flight Instructor						
Check Pilot						
Flight Engineer						
Cabin Attendants						
Other Crew						
Passengers						
- TOTAL ABOARD -	2				2	
Other Ground						
- GRAND TOTAL -	2				2	


  

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<b>Administrative Information</b>		
<p>Investigator-In-Charge (IIC)</p> <p>Leah D. Yeager</p>		
<p>Additional Persons Participating in This Accident/Incident Investigation:</p> <p>Dan Donnelly FAA/FSDO Oklahoma City, OK</p> <p>Mike Koonce Cessna Aircraft Company Wichita, KS</p> <p>Jason Lucasik Teledyne Continental Motors Mobile, AL</p>		
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